

HAZOP FOR PLANT SAFETY

About the Course

The training course covers related knowledge on HAZOP technique and its practical real life application.

The course structure has been designed to be intensively interactive with ample stress on simple exercises for familiarization with HAZOP technique followed by case studies, workshop and exercises on the owner's plant documents and drawings.

The target participants are Plant Production and Technical Services Engineers, Operating Personnel, Safety Engineers, HSE Managers and Design Engineers.



Course Benefits

The benefits the participants will draw out of this course are:

- Understanding the use of HAZOP as a tool to identify hazardous deviation or situation and identify where the problems exist.
- Will be able to analyze the problems and evolve a creative and cost effective approach for finding the solution.

Course Content

No.	TOPIC
1.	An overview of current approaches to safety analysis techniques
2.	Hazard & Operability Study – Methodology and Applications – Session I
3.	Hazard & Operability Study – Methodology, roles, efforts, requisites and follow-up – Session II
4.	Hazard & Operability Study – Methodology, roles, efforts, requisites and follow-up – Session III
5.	Quiz, Q/A Session
6.	Case Studies
7.	HAZOP Study – A Simple Exercise
8.	HAZOP Software Demonstration – Hands-On Training
9.	Live Exercise-I on client's plant P&ID's – Session I (forming teams)
10.	Live Exercise-I on client's plant P&ID's – Session I (forming teams)
11.	HAZOP Review Meeting format, Report formatting and contents
12.	Live Exercise-II on plant P&ID's – Session I (Simulated full-fledged HAZOP Review meeting)
13.	Live Exercise-II on plant P&ID's – Session II (Simulated full-fledged HAZOP Review meeting)
14.	Review of earlier sessions, feedback, clarifications
15.	Concluding session

Methodology

The course is ideally for actual demonstration for an operating facility. The presentation is through power point slides, dummy exercises and actual in plant HAZOP exercise. Ideally the client should provide the following -

- a. HAZOP software (HAZOP-Pro5, DNV-Pro5, Primatch or equivalent) Note: If not available with the client, we can organize lease of the software for the duration.
- b. One set of P&ID's for each of the participants
- c. One set of following documents for reference during HAZOP Study:
 - (i) Project Design Basis (including process design basis, environmental stipulations)
 - (ii) Equipment Data Sheets
 - (iii) Instrument Data Sheets
 - (iv) Cause and Effect diagrams
 - (v) Fire & Gas Philosophy and lay-out of detectors, sprinklers, deluge, actuation valves
 - (vi) Electrical Single Line Diagram
 - (vii) Electrical Area Classification
 - (viii) Drains, catch pits, underground sewer system showing location of sealed manholes as applicable
 - (ix) Project piping specification
- d. One set of full size P&ID and layout to be displayed on the wall and marked with highlighters. These will be treated as HAZOP Master and form part of HAZOP Report